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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/744,375 | 02/05/2001 | Thomas Gildroy Shaw Dixon | 1-22918 | 5356 |

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EXAMINER

HORTON, YVONNE MICHELE

ART UNIT PAPER NUMBER

3635

DATE MAILED: 07/17/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/744,375

Applicant(s)
THOMAS GILDROY SHAW DIXON

Examiner
YVONNE M. HORTON

Art Unit
3635



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Feb 5, 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19, 21-33, 35, and 38 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 32 and 33 is/are allowed.
- 6) ☒ Claim(s) 1-19, 21-27, 29-31, 35, and 38 is/are rejected.
- 7) ☒ Claim(s) 28 is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on Feb 5, 2001 is/are a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 3/18/02 6) ☐ Other:

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DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "20" has been used to designate both a "flat face" and a "hot face". A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claims 1,2,4,18,21,24,27,30-33 and 35 are objected to because of the following informalities: "co-operate" should be --cooperate--. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-19,21-33,35 and 38 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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Regarding claims 1,18,19,21,25,27 and 33, the phrase "and/or" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Regarding claims 8,10,14 and 15, the phrases "plate-like" and "block-like" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "like", i.e. is it a plate or is it a block?), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1,2,4,6,7,10-15,18,19 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent #5,438,813 to WADE. Regarding claims 1,18 and 19, WADE discloses a furnace lining including an insulating material (22) having a hot face (19) and a cold face (21); wherein the cold face is positioned against a furnace wall (13). The insulation material (22) includes an embedded member (23) and a protective element (31) at least partially covering the hot face (19) secured thereto by a securing means (33,41,55). Further regarding claims 18 and 19 and in reference to claims 2,6 and 7; the securing means (33,41,55) comprises a shank (33) and a head (41) separably connected. The shank (33) is threaded and passes through the protective member (31) into the insulation (22). In reference to claim 4, the protective element is a net. Therefore, it

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is inherent that the shank (33) passes through a passage in the protective element. In reference to claims 10,11,12 and 14, the insulation material (22) is a plurality of individual modules (15) folded to have a "block" configuration and are disposed transversely to the furnace wall (13); wherein the embedded member (23) is forcefully rotated to extend transversely to the insulation folds/blocks (15). Regarding claims 13 and 15, the embedded element (23) is an elongate, strong material plate.

8. Claims 21,22,24-27,29-31 and 35 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent #5,438,813 to WADE. In reference to claims 21,31 and 35, the structure of WADE inherently defines a method of lining a furnace including the steps of attaching an insulation material (22) having a hot face (19) and a cold face (21); embedding a member (23); providing a protective member (31); and securing the protective element (31) by attaching a securing means (33,42,55). Regarding claim 22, the securing means include a threaded shank (33) having a head (41); wherein the shank (33) cooperates with the embedded member (23). In reference to claim 24, the shank (33) is inserted through a hole (unlabeled) in the embedded member (23), see figure 3. Regarding claim 25, the shank (33) engages a securing means (55). In reference to claim 26, the embedded member (23) is embedded by rotating. Regarding claim 27, the insulation material (22) is a plurality of individual modules (15) folded to have a "block" configuration and are disposed transversely to the furnace wall (13). In reference to claims 29 and 30, the shank (33) is rotated by engaging a tool (59) which is subsequently removed from the insulation (22). Regarding claim 31,

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Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459

(1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. Claims 3,5,16,17,38 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent #5,438,813 to WADE. As detailed in paragraph #6 above, WADE discloses the basic claimed furnace lining except for the embedded member having threads and the protective element being secured by adhesive. In reference to claim 3, although the plate of WADE does not have a threaded hole, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the hole with threads in order to aid in retaining the shank therein. Regarding claim 5, WADE is silent with respect to the material used to form the shank. He does however disclose that the head (41) is ceramic. It would have been an obvious matter of design choice for one having ordinary skill in the art at the time the invention was made

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to form the shank of WADE from a ceramic material in order to provide the system with a shank that is diverse when exposed to extreme hot and cold conditions. In reference to claim 17, WADE is silent with respect to the use of an adhesive to secure the protective member (31). Although WADE is not explicit in this regard, it would have been obvious to one having ordinary skill in the art to secure the protective "net" (31) with an adhesive in order to ensure attachment of the protective member to the insulation. Regarding claims 16 and 38, although WADE only discloses the use of one protective layer, it would have been obvious to one having ordinary skill in the art to provide the system of WADE with additional protective members since the mere duplication of essential parts of an invention involves only routine skill in the art.

12. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent #5,438,813 to WADE in view of EP 0695923. As detailed in paragraph #6 above, WADE discloses the basic claimed lining except for the protective element being a plate and the material used to form the protective element. EP 0695923 teaches that is known in the art to form a furnace protective element in the form of a ceramic plate (5). Thus, it would have been obvious to one having ordinary skill in the art to provide the system of WADE with the ceramic protective plate member of EP 0695923 in order to provide the furnace with superior insulation characteristics.

13. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent #5,348,813 to WADE, as detailed in paragraph #7 above, WADE discloses the basic claimed method except for the embedded member having screws to engage the threads of shank (33). Although the plate of WADE does not have a threaded hole, it would have been obvious to one

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having ordinary skill in the art at the time the invention was made to provide the hole with threads in order to aid in retaining the shank therein.

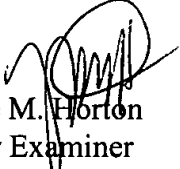
Allowable Subject Matter

14. Claim 28 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

15. Claims 32 and 33 are allowed.

16. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record fails to teach the method of lining a furnace wherein an embedded member is first aligned with the folds of the insulation and then rotated to be inserted into the insulation.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yvonne M. Horton whose telephone number is (703) 308-1909.



Yvonne M. Horton
Primary Examiner
Art Unit 3635
July 12, 2002